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Cystostereum sirmaurense sp. nov. from India

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Abstract—A new corticioid species, *Cystostereum sirmaurense*, is described from Himachal Pradesh, India.

Key words—*Agaricales, Agaricomycetes, Basidiomycota, Cystostereaceae,* Himalaya

Introduction

During the fungal forays conducted in August 2015 in the Nahan area of district Sirmaur, Himachal Pradesh, India, Ramandeep & Avneet collected a corticioid specimen growing in association with a living angiospermous tree in a mixed forest. Based on its macro and micromorphological details and comparison with the literature (Rattan 1977, Eriksson & Ryvarden 1975, Bernicchia & Gorjón 2010, Prasher & Ashok 2013, Dhingra & al. 2014, Sanyal 2014, Mycobank 2019) it has been placed in *Cystostereum* Pouzar (*Cystostereaceae*), close to the type species *C. murrayi* (Berk. & M.A. Curtis) Pouzar. A portion of the basidiocarp was sent for expert comment to Prof. Nils Hallenberg (University of Gothenburg, Sweden), who confirmed the findings and supported the proposal of a new species, described here as *Cystostereum sirmaurense*.

Materials & methods

The collection was sampled during a field trip conducted in the Nahan forest division of the Sirmaur district (Himachal Pradesh, India) during August 2015. Colour standards follow Kornerup & Wanscher (1978). The dried specimen was deposited at the Herbarium, Department of Botany, Punjabi University, Patiala, India (PUN).

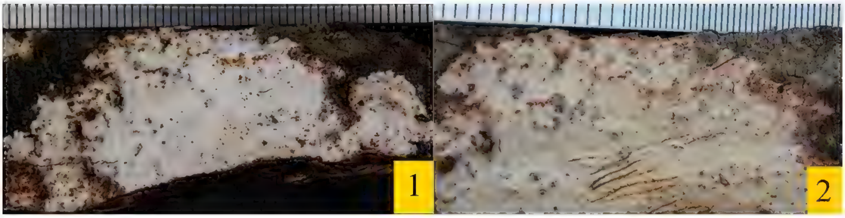

PLATE 1. *Cystostereum sirmaurense* (holotype, PUN (Kaur 10097)). 1. Basidiocarp showing hymenial surface (fresh); 2. Basidiocarp showing hymenial surface (dry). Scales in mm.

Crush mounts and free hand sections were used to study the morphology of hyphae, cystidia, basidia, basidiospores, etc. in water and 3%, 5%, and 10% KOH solutions, and stained in cotton blue (1% in lactophenol), Congo red (1% in distilled water), phloxine (1% in distilled water), sulphovanillin (0.5gm vanillin + 4.0ml conc. sulphuric acid + 2.0ml distilled water), and Melzer's reagent (0.5gm iodine + 1.5gm KI + 20gm chloral hydrate + 20ml distilled water). Line diagrams of various microscopic structures were drawn using a camera lucida.

Taxonomy

Cystostereum sirmaurense R. Kaur, Avn.P. Singh & Dhingra, PLATES 1,2

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Differs from *Cystostereum murrayi* by its almost smooth hymenium with few scattered tubercles and more broadly ellipsoid basidiospores.

TYPE: India, Himachal Pradesh: Sirmaur, Nahan, 2 km from Ambwala towards Nahan, on a living angiospermous tree, 23 August 2015, Ramandeep Kaur & Avneet Pal Singh 10097 (, PUN).

ETYMOLOGY: The epithet refers to the district where the collection was made.

Basidiocarp resupinate, effused, adnate, ≤340 µm thick in section; hymenial surface smooth but with minute scattered tubercles, white when fresh, becoming yellowish white to orange white on drying; margins thinning or indeterminate, paler concolorous. Hyphal system dimitic. Generative hyphae branched, with clamps, thin-walled, subhyaline up to 2.8 µm wide. Skeletal hyphae unbranched, aseptate, thick-walled, subhyaline up to 5.2 µm diam. Cystidia 26–44 × 7–8.5 µm, variably shaped but generally with an obtuse apex, thin- to somewhat thick-walled, with basal clamp, embedded in the hymenium and subhymenium, not staining in sulphovanillin. Basidia 15–20 × 3.8–4.7 µm, subclavate to clavate, 4-sterigmate, with basal clamps; sterigmata ≤3.3 µm long. Basidiospores 3.3–4.2 × 2.3–3.3 µm, ellipsoid to broadly ellipsoid, apiculate, thin-walled, smooth, inamyloid, acyanophilous.

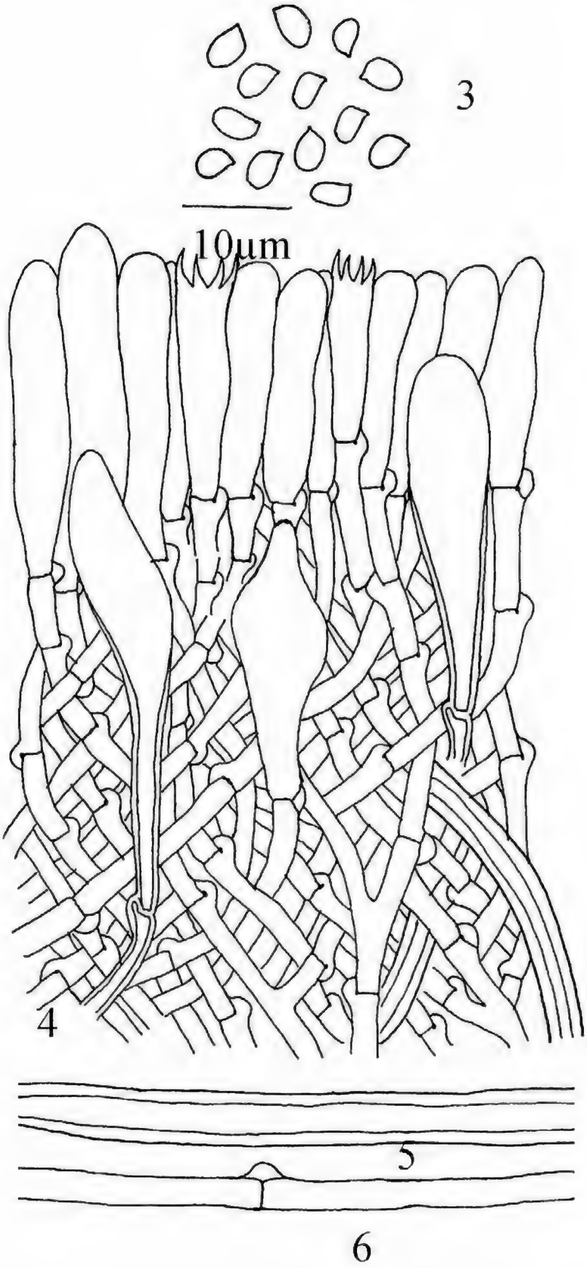

Plate 2. *Cystostereum sirmaurense* (holotype, PUN (Kaur 10097)). 3. Basidiospores; 4. Reconstruction of hymenial and subhymenial zones; 5. Skeletal hypha; 6. Generative hypha.

Discussion

Pouzar (1959) proposed *Cystostereum* on the basis of unique combination of numerous gloeocystidia, dimitic hyphal system with very scarce light-couriered skeletal hyphae, hard consistency of trama, and inamyloid basidiospores. With the addition of *C. sirmaurense*, eight species are now represented in *Cystostereum* (MycoBank 2019). From India, previously only *C. murrayi* has been described, from Himachal Pradesh (Rattan 1977; Kaur 2018) and Uttarakhand (Sanyal 2014). *Cystostereum murrayi* differs from *C. sirmaurense* in having a tuberculate hymenial surface and narrower basidiospores.

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